

The Department of Health and Human Services
Bureau of Health



A Division of Disease Control Newsletter

The Maine Epi-Gram

June 2004

This month:

- Epi-Gram goes electronic
- WNV surveillance and planning in Maine 2004
- STDs on rise among men who have sex with men
- Rabies in Maine 2003
- Pertussis: public health meets clinical practice

Maine Epi-Gram Goes Electronic

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Due to cost-saving initiatives, the Bureau of Health is unable to continue printing and mailing the *Maine Epi-Gram*. The *Maine Epi-Gram* will be published on a bimonthly basis and will be available only in an online format which can be accessed from the Division of Disease Control [DDC] website: www.maine.gov/dhs/boh/ddc/indexnew.htm

From the DDC website, you will find a link to the *Maine Epi-Gram* located at the bottom of the left-hand column. You can also go directly to the Epi-Gram home page at: <http://www.maine.gov/dhs/boh/ddc/epigramhome.htm>

A listserve has been established to notify interested readers when a new issue is posted on the website. All *Maine Epi-Gram* readers are encouraged to subscribe to this new listserve today. Simply send an email message to:

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West Nile Virus Surveillance and Planning in Maine, 2004

West Nile Virus (WNV) infection in Maine was first identified in late 2001 in dead birds found in York and Cumberland counties. Over the subsequent two seasons, WNV was identified through a public health surveillance system in avian specimens from most of the more densely populated areas of the state. Between late June and mid-October 2003, 98 corvids from throughout the state tested positive for WNV. Two mosquito pools also tested positive for West Nile Virus. Although horses have been tested for West Nile virus since 2001, none have proven positive. In spite of active surveillance and testing of persons with encephalitis and meningitis, Maine is one of only three U.S. states and the only state east of the Mississippi, in which no human cases have been identified through 2003.

Bird surveillance Research during the past four years has demonstrated that geographic patterns in corvid deaths and WNV positivity in tested dead corvids can provide early evidence that the virus may have entered a local ecologic cycle. It has also been clear that a “positive bird event,” in and of itself, does not predict a high WNV risk for humans but must be correlated with many other variables including meteorological data, distribution and density of potential vector mosquitos, and human population density. While corvids are particularly vulnerable to WNV infection, birds of more than 70 different species have tested positive for WNV in North America.

Similar to previous years, the Bureau of Health is requesting that residents and visitors report sightings of dead birds of any species to a toll-free reporting line (888-697-5846) that will operate between mid- June and late October. Although the Bureau will be testing selected birds again this year for WNV, fewer birds will be tested. This year, birds from each of the 16 counties and the 4 metropolitan areas of Bangor, Portland, Lewiston, and Augusta will be tested until one bird from each county and metropolitan area is positive. Additional testing may occur based upon dead bird clusters and human illness. More information will become available on Maine’s WNV website at: www.maine.gov/dhs/boh/ddc/westnile.htm

Mosquito surveillance Characterization of potential vector mosquito populations helps to assess the level of risk that may result from introduction of WNV into various areas of Maine and to target prevention and control activities. Only a relatively small number of the more than 40 mosquito species in Maine are believed to play a significant role in WNV ecology and transmission. During 2004, more resources are being allocated to mosquito surveillance since this information is essential when considering mosquito control in a community. Teams from the University of Maine Extension Service and the Maine Medical Center Lyme Disease Research Laboratory will be trapping and speciating mosquitoes, and defining larval breeding areas at a number of sites across the state to include the Portland, Bath/Brunswick, Bangor/Orono, Lewiston/Auburn, and Biddeford/Saco areas. While some of the mosquitoes may be tested for WNV, the principal objective of this activity is to perform a descriptive survey of mosquito distribution and densities in the state.

Horse surveillance Equine cases of WNV have occurred in a number of enzootic areas since 1999, causing fatal CNS disease in affected animals. The Public Health Veterinarian at the Bureau of Health is available for consultation on this issue. He can be reached by phone at 287-

3701. He will assist with processing equine clinical specimens through the Health and Environmental Testing Laboratory.

Human surveillance There have been no human cases of WNV disease in Maine to date. However, based on bird and mosquito surveillance there is evidence WNV is well-established in Maine and cases of human infection will inevitably occur over time. During 2004, Maine health care providers will be asked to submit patient specimens for WNV testing in cases of encephalitis and aseptic meningitis, and other unexplained febrile illnesses in which WNV infection may be in the differential diagnosis. Following guidance from the Center for Disease Control and Prevention, the Bureau of Health recommends that all pregnant women with fever of unknown cause also be tested for WNV. The Health and Environmental Testing Laboratory will perform testing free of charge on appropriate CSF and serum samples. Additional information on testing criteria and requirements is forthcoming and will be communicated to health care providers and laboratories.

Public information and education The Bureau of Health will be distributing information on personal protection from mosquito bites and on measures that individual citizens can take to reduce mosquito breeding areas. The Bureau continues to emphasize that personal protection is the best method for preventing disease transmission. The Bureau endorses the use of products containing DEET. These products when used according to application instructions are proven to be effective and safe. Health care providers are encouraged to discuss this with their patients, especially those over the age of 50 who are at higher risk for serious illness.

Mosquito control Efforts at community mosquito control may include measures to reduce potential mosquito breeding areas, application of larvicides to prevent maturation of larvae, and application of sprays (“adulticides”) to kill mosquitos. Across the United States, many affected communities have used a combination of these approaches in an integrated mosquito management approach. In general, materials used for larviciding are biological, and adulticide agents are chemical. The effectiveness of any of these materials in reducing the occurrence of human disease is variable.

In Maine, the decision to initiate municipal clean-up for source reduction purposes, or to use larvicides or adulticides at a community level is left to municipal authorities. The use of EPA-approved insecticides is regulated by the Department of Environmental Protection, Maine Pesticide Control, and the Maine Department of Agriculture. During April 2004, the Maine Municipal Association held workshops for town officials addressing these methods, their relative merits and disadvantages, and the regulatory environment. Materials from these meetings are available at www.mma.org

At this time, the Bureau of Health is emphasizing that residents and visitors take personal protective measures and engage in efforts to decrease potential mosquito habitat (e.g., by reducing standing water), and is not issuing specific recommendations for insecticide use to control WNV. In the event of a declared extreme public health emergency, the Governor may order more aggressive measures at a regional or statewide level.

Conclusion WNV infection is a continuing public health threat in Maine. It is possible that human cases of illness will be seen here this season.

The risk of acquiring infection should be considered to be present statewide. It is not possible to predict the trajectory of this epidemic, or to know whether Maine will experience mild, moderate, or severe activity during 2004. As in previous years, the Bureau of Health will continue to conduct surveillance activities to track WNV in Maine.

Updates and alerts will be issued as warranted. In addition, the Bureau will provide information about clinical and prevention information to the medical community and the public.

For consultation about testing recommendations, to report suspect or confirmed human cases of WNV, or to request brochures and posters, please contact the Bureau of Health at 1-800-821-5821. Current information is available on the Bureau of Health's website at www.maine.gov/dhs/boh/ddc/westnile.htm

Contributed by Jennifer Gunderman-King and Geoff Beckett

STDs on the Rise Among Men Who Have Sex with Men in Maine

Men who have sex with men (MSM) are at increased risk for multiple sexually transmitted diseases (STDs). Recent data shows increased incidence of STDs among MSM in Maine. Health care providers have a unique opportunity to assist their MSM patients by providing comprehensive STD care and treatment.

During the past several years, numerous reports have documented rising rates of STDs among MSM in urban communities throughout the U.S. Such increases appear to be associated with a resurgence in unsafe sexual practices. Recent data indicate that these national, largely urban trends may now be emerging in Maine. Bureau of Health disease reports have revealed alarming increases in overall incidence of certain STDs; these increases correspond to growing proportions of infection among MSM.

Fifty-five people in Maine were newly diagnosed with HIV in 2003, representing an annual increase of more than 40%. MSM comprised almost 70% of this total, topping three years of increases for this population.

Likewise, gonorrhea incidence rose markedly last year, increasing 63% to 231 cases. Forty percent of these diagnoses were among MSM. Moreover, one in five MSM diagnosed with gonorrhea were co-infected with HIV.

Finally, Maine experienced an unexpected resurgence in syphilis diagnoses, with 15 cases reported last year. Although this total appears small, it represents the largest annual number of syphilis diagnoses seen in the state for more than a decade. Again, MSM were disproportionately affected, accounting for half of all cases, including a small number who were co-infected with HIV.

These data suggest that MSM in Maine are increasingly engaging in risky sexual behaviors that transmit HIV and STDs. They underscore the importance of a more focused STD health response for MSM. The Centers for Disease Control and Prevention (CDC) *2002 STD Treatment Guidelines* provide specific recommendations for STD prevention services that should be provided to all sexually active MSM. These services include:

- Annual counseling and testing for HIV;
- Annual screening for syphilis, gonorrhea and chlamydia;
- Vaccination against hepatitis A and hepatitis B.

Comprehensive STD services delivered to MSM in both public and private sectors are critical for preventing continued high rates of infection. However, existing services often do not provide recommended MSM-specific services or fail to identify MSM patients. Despite recommendations to vaccinate MSM to prevent hepatitis A and hepatitis B infections, vaccination coverage in this population is low.

Private providers in Maine are the front line in stemming the increasing STD rates among MSM. CDC studies outlined in the 2002 Treatment Guidelines indicate that most MSM have a regular

source of health care where STD prevention services could be provided, and that a majority receives primary care from private providers.

Clinicians are encouraged to routinely identify sexually active MSM and to consistently provide all recommended STD prevention services.

For many providers, the most difficult part of a clinical intervention may be asking patients about the gender of their sexual partners. Despite the awkwardness such questions may cause, this information is critical for identifying and assisting MSM, who are at highest risk for infections. Asking patients whether they have sexual relations with men, women, or both, especially when followed with open-ended questions, is a nonjudgmental way of opening the door to a comprehensive sexual risk assessment. Such risk assessments are the best way to ensure that patients are provided with effective, appropriate STD testing, treatment and prevention.

STD testing is covered by most U.S. health insurance plans. Surveys of major health insurers indicate that preventive care services, including vaccination and testing, are increasingly covered for persons at risk, under plans with a preventive care component. Health insurers report that specific risk factor data is not required for reimbursement. An assessment by a clinician that the preventive care service is “medically indicated” is usually sufficient. MaineCare covers testing for syphilis, gonorrhea, and chlamydia, and vaccination for hepatitis A and B without prior authorization.

The Bureau of Health encourages all of its public health partners to promote and deliver services known to be effective in preventing STDs among MSM. A focused effort can result in slowing or reversing the current high rates of STDs in this population.

Additional information and educational materials on STD prevention among MSM are available at the following internet sites:

www.cdc.gov/hepatitis

www.cdc.gov/std

www.cdc.gov/hiv

Information on adult vaccination is available at www.cdc.gov/nip

Contributed by Mark Griswold and Bob Woods

Animal Rabies in Maine, 2003

In 2003, a total of 82 animals tested positive for rabies at the Bureau of Health, Health and Environmental Testing Laboratory [HETL]. While this represents an increase from the 67 animal cases reported during 2002, it is still well below the peak total of 248 cases reported in 1998. Animal rabies continues to be an important public health concern in Maine and the rest of the northeastern United States. The spread of the rabies raccoon strain epizootic that arrived in Maine 10 years ago ensures that wildlife rabies transmission will continue for the foreseeable future. Rabies among bats is not increasing, but is also an ongoing concern. Public health approaches to preventing rabies in humans include educating the public to avoid direct contact with wild animals, to batproof human dwellings, and to seek medical follow-up for possible exposures. Other public health strategies include promoting canine and feline rabies vaccination, and collaborating with the medical community to ensure appropriate evaluation and use of postexposure prophylaxis. While there have been no human rabies cases reported in Maine since the 1930s, an average of 2-3 human cases per year continue to occur in the United States. For detailed information on rabies and links to other reliable sites go to:

<http://www.maine.gov/dhs/boh/ddc/rabies.htm>

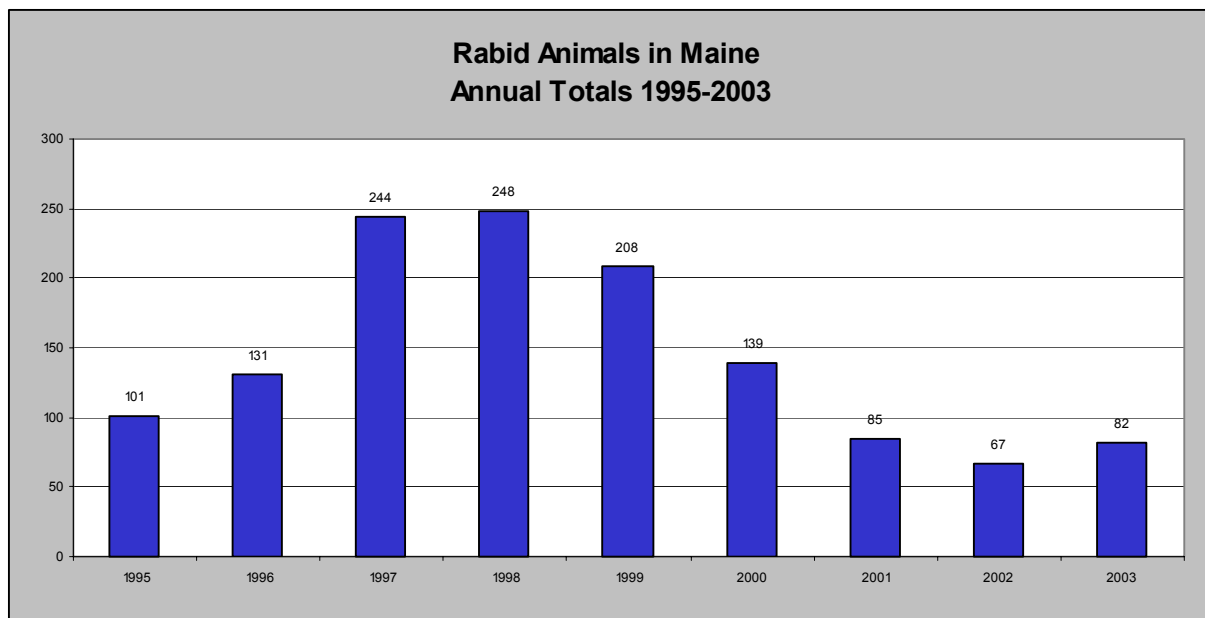
Testing Data In Maine, testing for suspected animal rabies cases is performed at the HETL. Because brain tissue is required to perform a rabies test, tested animals must first be euthanized. Testing is done routinely only in situations in which a human or a domestic animal has had a potential rabies exposure from the *tested* animal, and information is required to make treatment decisions. No “surveillance testing” for rabies in other animals is performed, hence testing data is more representative of rabies activity in areas with dense human population or human recreational activity and less representative of areas with relatively little human presence.

Geographic Distribution of Cases During 2003, rabies was identified in tested animals from 11 of Maine’s 16 counties. The greatest numbers were from Cumberland (27%), Androscoggin (23%), and Kennebec (23%) county. Aroostook County is the only county in Maine that has not yet had an animal rabies case associated with the raccoon strain epizootic.

Distribution of Cases by Species Of the 82 Maine animal rabies cases during 2003, 46% were raccoons and 30% were skunks, with the remainder occurring among bats (11%), foxes (6%), woodchucks (2%), a bobcat (<1%), a dog (<1%), and a horse (1%). The chart on the next page itemizes species distribution by Maine county.

Rabid Animals Identified by Species and County									
January 1, 2003 through December 31, 2003									
County	Raccoon	Skunk	Fox	Bat	Woodchuck	Horse	Bobcat	Dog	TOTAL (%)
Androscoggin	11	6		1	1				19 (23%)
Aroostook									0 (%)
Cumberland	9	5	5	2			1		22 (27%)
Franklin	1	1		1	1				4 (5%)
Hancock	1	1							2 (2%)
Kennebec	10	7		1				1	19 (23%)
Knox									0 (%)
Lincoln						1			1 (1%)
Oxford	2	3		1					6 (7%)
Penobscot		1							1 (1%)
Piscataquis									0 (%)
Sagadahoc	2								2 (2%)
Somerset									0 (%)
Waldo				1					1 (1%)
Washington									0 (%)
York	2	1		2					5 (6%)
TOTAL	38 (46%)	25 (30%)	5 (6%)	9 (11%)	2 (2%)	1 (1%)	1 (1%)	1 (1%)	82

Overall Trends The graph below documents annual totals for the numbers of Maine animal rabies reports from 1995 –2003. Note that cases rose steadily during the mid-1990s and peaked in 1998, before a declining trend. It is important to remember that wildlife rabies numbers tend to rise and fall in 4 to 5 year cycles and that increases are likely to occur again over time.



Comments In North America, rabies is maintained in the wild by several terrestrial mammal species that vary by region. In the Northeast, a strain associated with raccoons has predominated since the 1980s, with frequent “spillover” cases among skunks, foxes, and woodchucks. Cases may also occur as a result of spillover to other mammalian species, including livestock and unvaccinated dogs and cats. While rabbits and small rodents may become infected with rabies, such cases are seen uncommonly, in part because they are less likely to survive for long periods after the bite that infects them.

Rabies occurs at a constant low level among bats across North America, and there is no evidence of “trending” of bat rabies, as is seen with the raccoon strain. Nevertheless, the great majority of the small numbers of human rabies cases occurring in this country since the 1980s have been bat strains, suggesting that the affected persons had exposure to an infected bat in recent weeks or months. Because there was no recall of bat bites in many of these cases, though many noted they either found bats in their bedrooms or had brief physical contact with them, recommendations on postexposure management for persons with a history of bat exposure have become more aggressive in recent years. For detailed information on bats and rabies go to:

<http://www.cdc.gov/ncidod/dvrd/rabies/Bats & Rabies/bats&.htm>

Conclusion A detailed review of rabies prevention and postexposure management is beyond the scope of this article. Clinicians should be familiar with guidance published by the Centers for Disease Control and Prevention (*Human Rabies Prevention: United States, 1999*), which can be accessed directly from the CDC website listed above and from the Maine rabies website cited on page 5.

In Maine, recent numbers of terrestrial animal wildlife cases have been declining, but that trend is subject to reversal and wildlife rabies will continue to present risks to people for many years to come. Certain types of bat exposures carry with them very small rabies risks for humans. By decreasing potential physical contact between bats and humans and ensuring appropriate follow-up in the event of an exposure, these small risks may be further reduced.

Contributed by Susan Schow, Bob Gholson, and Geoff Beckett

Pertussis: Public Health Meets Clinical Practice

During 2003, an increase in pertussis cases occurred nationally as well as in Maine. The incidence of pertussis in Maine jumped from 21 cases reported in 2002 to 91 cases reported in 2003. Several community and institutional outbreaks contributed to this increase. While the reasons for increasing pertussis incidence are beyond the scope of this article, a brief review of some of the strategies that may help to improve case recognition and secondary prevention are described below.

Appreciating the importance of disease control For older children and adults, pertussis is an often uncomfortable and prolonged illness, but rarely results in hospitalization or death. The bigger public health issue involves the threat that continuing chains of transmission may eventually affect infants, who are at significant risk of severe complications. Among infants with pertussis, studies indicate that 75% of cases are exposed to infection by an older family member (sibling or parent often undiagnosed) who brings it into the household. Pertussis vaccination provides high levels of protection (80-85%) after the first two scheduled doses, and can attenuate illnesses in vaccinated children who do become ill. Vaccine immunity levels remain high until they begin to wane several years after the last scheduled dose (no vaccine is currently approved for use in persons over age 7 years). Because of waning immunity, most adolescents and adults are susceptible to pertussis if exposed.

Maintaining a high index of suspicion Pertussis begins with nonspecific upper respiratory symptoms (catarrhal stage) that persist for one to two weeks before significant cough illness begins. The paroxysmal stage of pertussis usually lasts for at least several weeks, and includes prolonged paroxysms of coughing that result in exhaustion, and sometimes conclude with post-tussive vomiting and inspiratory “whoops.” Adolescents and adults often lack some of these more dramatic characteristics, so unusually persistent coughing may be the best diagnostic clue to the possibility of pertussis.

Obtaining diagnostic tests At the present time, no serological tests are readily available to clinicians. To test for pertussis, a nasopharyngeal swab or nasopharyngeal washing must be obtained for bacterial culture or for PCR antigen assay. Clinical professionals may be disinclined to obtain these tests because of potential patient discomfort, inexperience with the technique, or lack of appropriate test kits. Even when specimens are obtained, sensitivity is not high (cultures) and false positives can occur (PCR).

Appropriate antibiotic treatment Many of the antibiotics commonly used in empiric treatment of suspected bacterial respiratory infections are not effective against pertussis. When effective antibiotics are used (see below), they are likely to influence the clinical course of illness only when given during the catarrhal or early paroxysmal stages. However, antibiotic treatment is important even after several weeks of coughing because it eliminates *B. pertussis* from respiratory secretions and prevents further transmission.

Use of antibiotics in prophylaxis Asymptomatic individuals who have been exposed to a documented case of pertussis through close contact (sharing of respiratory secretions, intimate “in the face” contact, or prolonged exposure in small, poorly ventilated areas) should be prescribed one of the same antibiotics used for pertussis treatment, because of the high rate of transmission. This is counterintuitive to clinicians who may be uncomfortable writing such prescriptions because of appropriate concern about the problem of injudicious antimicrobial use.

Infection control for pertussis contacts with mild illness In the setting of a pertussis outbreak or among close household and social contacts of a documented case, a relatively mild and

nonspecific cough illness can indicate the onset of the catarrhal phase of pertussis. Because this is the most infectious stage of disease, the Centers for Disease Control and Prevention (CDC) recommends that ill contacts remain away from school, work, and child care until they have completed 5 days of treatment with any of the effective antibiotics. This practice is often difficult to accept both for patients and for clinicians seeing these patients who present with symptoms typical of a viral URI, an allergy, or asthma.

Immunization Pertussis vaccination continues to be the most effective strategy for preventing disease among young children. Vaccination will prevent pertussis in children through elementary and early middle-school ages and will attenuate cases that do occur. As pertussis outbreaks continue to occur in Maine, it is very important to ensure that incompletely-immunized children under age 7 are brought up to date in their vaccine schedule. It is hoped that acellular vaccine booster doses for older children and adolescents will become available over the next several years.

Recognizing possible pertussis cases Clinicians should consider pertussis diagnostic testing for any ill person with characteristic severe cough (i.e., severe cough paroxysms, post-tussive vomiting, or inspiratory whoop) or for persons of any age with an unexplained cough illness that persists beyond 2-3 weeks. The index of suspicion should be higher if pertussis cases have been recognized locally. You may call the Bureau of Health Immunization Program (1-800-867-4775) to inquire about any documented cases in your area.

Diagnostic tests The Bureau of Health provides pertussis test kits to hospital laboratories for obtaining specimens for bacterial culture. Call the Immunization Program at 1-800-867-4775 if you need assistance locating kits. Some reference laboratories also offer pertussis PCR testing. For either test method, specimens must be obtained through nasopharyngeal (NP) swabbing or NP aspiration. The Bureau of Health can also provide your practice with a 5-minute instructional video on recommended techniques for obtaining NP swabs.

Antibiotic treatment Effective antibiotics for pertussis treatment include erythromycin (14 day course), trimethoprim-sulfamethoxazole (14 day course), azithromycin (5-7 day course), and clarithromycin (10-14 day course). For dosage recommendations please call the Bureau of Health Immunization Program or go to www.state.me.us/dhs/boh/han/2004PHA050.doc. While any of these medications may be used, be aware that the best data on effectiveness is for erythromycin, which should be considered the drug of choice. Treatment will attenuate disease only if started early during the course of illness, but should be initiated even if up to 3 weeks of coughing have transpired, in order to decrease the risk of transmission to other persons.

Prophylaxis and preventive management of persons exposed to pertussis When a case of pertussis is confirmed, antibiotic prophylaxis should be initiated as soon as possible for asymptomatic household members and other intimate contacts of the case. Exposed close contacts of pertussis cases who develop respiratory symptoms should be excluded from work, school, or daycare attendance until they have completed 5 days of antibiotic treatment. Bureau of Health epidemiologists will work with you and your practice to help identify close contacts and provide guidance on related issues.

Community and institutional outbreaks During outbreaks, the Bureau of Health may make special recommendations. Special recommendations are communicated to clinical providers through the Health Alert Network. Health Alerts are distributed to hospital emergency departments, through hospital infection control departments, and through the Maine Primary Care Association. Health Alerts are also posted on the Bureau's website at:

www.mainepublichealth.gov

Contacting the Bureau of Health and reporting suspect cases For pertussis-related concerns, call: 1-800- 867-4775 during working hours. To report a suspect pertussis case or obtain after-hours assistance call the 24-hour reporting and consultation line at 1-800-821-5821.

Contributed by Jiancheng Huang and Geoff Beckett

2003 EPIDEMIOLOGY RECOGNITION AWARDS

The Division of Disease Control, Maine Bureau of Health has the pleasure of announcing the recipients of the 12th Annual Public Health epidemiology Recognition Awards. The recognition awards are presented to members of the health care community who do an outstanding job of working to promote public health surveillance within their communities throughout the year. The awards were given during the Division of Disease Control's Annual Infectious Disease Symposium, "Emerging Infectious Diseases in Maine: The Public Health Response," held in Augusta on November 5, 2003.

The recipients of this year's awards were Patricia J. Carson, ICP, Cary Medical Center, Caribou, Thomas Shandera, ICP, Acadia Hospital, Bangor and Donald Piper, Microbiology Director, Nordx, South Portland. The purpose of these awards is to acknowledge those medical professionals who have made significant contributions to effective disease surveillance in Maine. This award is a certificate with the image of the "Broad Street Pump," implicated as the source of infection by John Snow in his classic investigation of an 1854 cholera epidemic in London. Almost one and one-half centuries later, it remains clear that by striving to improve, promote and maintain an active disease surveillance system, the health of Maine citizens will be better protected.

The staff of the Division of Disease Control congratulates the recipients of this year's award.



Thomas Shandera, ICP, Acadia Hospital, Bangor, Kathleen F. Gensheimer, MD, MPH, State Epidemiologist, Augusta, Patricia J. Carson, ICP, Cary Medical Center, Caribou, and Donald Piper, Microbiology Director, Nordx, South Portland

Annual Infectious Disease Conference

November 4, 2004

Augusta Civic Center

Since 1983, the Infectious Disease Epidemiology Program has hosted the Annual Infectious Disease Conference which covers emerging public health issues of concern to medical practitioners in Maine. The 2004 conference will be held on November 4th at the Augusta Civic Center. Stay tuned for information about registration.

Disease Control in Maine: Sally Lou Patterson, Director, Division of Disease Control, Maine Bureau of Health

Emerging Infections Diseases in Maine: A Public Health Perspective: Geoff Beckett, Assistant State Epidemiologist, Maine Bureau of Health, and Epidemiology Program Staff

Food Disease and Food Safety: Amy Dechet, M.D., Foodborne and Diarrheal Disease Branch, Centers for Disease Control and Prevention, Atlanta, Georgia

Community Acquired MRSA: Challenges and Controversies: Rachel Gorowitz, Division of Healthcare Quality Promotion, Centers for Disease Control and Prevention, Atlanta, Georgia

Epidemiology Recognition Awards

Hospital Infections: What's New in 2004? Mike Tapper, Chief of Infectious Diseases, Lenox Hill Hospital, New York, New York

Current Approaches in the Prevention and Control of Pertussis: John S. Moran, M.D., M.P.H., Epidemiology and Surveillance Division, National Immunization Program, Centers for Disease Control and Prevention, Atlanta, Georgia

HIV Testing in the Clinical Setting: Current Practice, Future Perspectives: Panel Discussion,
Speakers TBA



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